



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,815	03/07/2002	Thomas R. Fenelon	00-263	7978

719 7590 10/27/2003

CATERPILLAR INC.
100 N.E. ADAMS STREET
PATENT DEPT.
PEORIA, IL 616296490

EXAMINER

CHANG, CHING

ART UNIT	PAPER NUMBER
----------	--------------

3748

DATE MAILED: 10/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/092,815

Applicant(s)

FENELON ET AL.

Examiner

Ching Chang

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office acknowledges the request of reconsideration filed on September 3, 2003 (Paper No. 10).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. ***Claims 1-2, 6-9, and 11-13 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hu (US Patent No. 5,680,841).***

Hu discloses a fluid system (See Fig. 1) for an internal combustion engine (10), said internal combustion engine including a head assembly (20, 52) having at least one subsystem (30, 32, 40, 60, 70) positioned therein, said fluid system comprising: a fluid reservoir (78); hydraulic fluid (50) contained within said stand alone fluid reservoir; and a fluid pump (80) operatively supplying said hydraulic fluid to the head assembly and being used for actuating the at least one subsystem positioned in the head assembly of the internal combustion engine, wherein said fluid system includes a high pressure fluid manifold (64), wherein said hydraulic fluid is used to actuate an exhaust valve actuation

Art Unit: 3748

system (30, 32, 40, 60, 70), wherein said exhaust valve actuation system is a compression release brake system (See ABSTRACT; Col. 3, line 29 through line 52), where said hydraulic fluid is used to actuate an intake valve actuation system (30, 32, 40, 60, 70).

Hu further discloses that the hydraulic fluid may be ... any other suitable fluid (See Col. 4, line 12 through line 13).

This recitation by Hu is deemed by the Examiner to be an indication that such is a stand alone system and thus inherent under section 102 (b). Furthermore, the use of a "hydraulic fluid" is an express statement that the fluid entered to actuate the valve; does not contain other fluids utilized by the engine such as oil.

With regard to section 103(a), it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the teaching from the Hu reference to use any other suitable fluid solely from a stand alone fluid reservoir for a stand alone fluid system, since the use thereof would provide an improved hydraulic fluid system to actuate a subsystem in an engine head assembly.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 8, 9, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hara et al. (US Patent No. 5,501,186).

Hara discloses a fluid system (See Figs 5-6, 10) for an internal combustion engine, said internal combustion engine including a head assembly having at least one subsystem (10, 12, 14, 80, 120) positioned therein (See Col. 2, line 39 through Col. 3, line 53; Col. 5, line 27 through Col. 5, line 52), said fluid system comprising: a fluid reservoir (Figs 6, 10); hydraulic fluid contained within said fluid reservoir; and a fluid pump (112) operatively supplying said hydraulic fluid to the head assembly and being used for actuating the at least one subsystem positioned in the head assembly of the internal combustion engine; wherein said fluid system includes a high pressure fluid manifold (See Col. 3, line 54 through Col. 4, line 14; Col. 5, line 53 through Col. 6, line 18); where said hydraulic fluid is used to actuate an intake valve actuation system (12, 14, 70, 72, 80, 120).

Hara further discloses a hydraulic diagram (Fig. 6) for the said fluid system (See Col. 3, line 54 through Col. 4, line 14; Col. 5, line 53 through Col. 6, line 18). Since the hydraulic fluid system shown in Figure 6 has different operation characteristics as compared to the existing engine oil lubrication system, the hydraulic fluid system disclosed by Hara is considered by the Examiner as a stand alone system with a stand alone fluid reservoir, and be used solely for actuating the at least said one subsystem.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the teaching from the Hara reference to use a stand

Art Unit: 3748

alone fluid system with a stand alone reservoir, since the use thereof would provide an improved hydraulic fluid system to actuate a subsystem in an engine head assembly.

5. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hu or Hara (as applied to claims 1 and 9 above) in view of Glassey (US Patent No. 5,191,867).

Hu discloses the invention as recited above, however, fails to disclose the said subsystem is a fuel injection system.

The patent to Glassey on the other hand, teaches that it is conventional in the hydraulic system application art, to utilize a hydraulic system (20) to actuate a fuel injection system (10, 18).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the hydraulic system to actuate a fuel injection system as taught by Glassey in the Hu device, since the use thereof would provide an improved fuel injection system for the internal combustion engine.

6. Claims 3-4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hu or Hara (as applied to claims 1-2, and 13/9 above) in view of Bartley (US Patent No. 6,220,521).

Hu discloses the invention as recited above, however, fails to disclose a heat exchanger (or a heater) operatively connected between the fluid pump and the high pressure manifold for a camless engine.

The patent to Bartley on the other hand, teaches that it is conventional in the heat exchanger application art, to utilize a heat exchanger (33) to maintain the hydraulic fluid temperature of a hydraulic system (60) in a camless engine (30).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized a heat exchanger as taught by Bartley in the Hu device, since the use thereof would maintain the hydraulic fluid at an acceptable viscosity during different operating temperatures of the engine.

Response to Amendment

7. The applicants' argument of the rejection of "stand alone" in claims 1 and 9 as new matter is deemed persuasive, therefore, the rejection under 35 U.S.C. 112, first paragraph on claims 1 and 9 mailed on July 17, 2003 (Paper No. 9) is withdrawn.

"Applicants agree that the Hu reference does state "the hydraulic fluid may be ... any other suitable fluid" (See Page 6 of Attorney's REMARKS), and "Applicants contend that the reference does suggest that other fluids could be used to perform the hydraulic functions" (See Page 6 of Attorney's REMARKS). In the event of "the hydraulic fluid may be ... any other suitable fluid", the Hu reference does teach or suggest "that the fluid system be a self contained stand alone system", and "could be used to perform the hydraulic functions", therefore Examiner does not agree that the Hu reference "teaches away from" the limitation "SOLEY".

In addition, in response to applicants' argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "Furthermore, the Hu reference teaches a fluid system to improve cam and valve interaction. This does not address the problem of keeping the operating fluid free from contaminants of combustion or controlling the temperature for purposes of response time of the systems" (See Page 5 of Attorney's REMARKS), and "The intent of the term stand alone is that the reservoir and the remainder of the fluid system is isolated/not commingled with any other fluid operation/system hence dedicated for providing operational fluid control of the subassemblies positioned in the head of the internal combustion engine" (See Pages 5-6 of Attorney's REMARKS)) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Kahrs et al. (US Patent No. 5,509,383).
- Schechter et al. (US Patent No. 5,373,817).
- Errikson et al. (9WO' 138).

9. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ching Chang whose telephone number is (703)306-3478. The examiner can normally be reached on M-Th, 7:00 AM -5:00 PM.

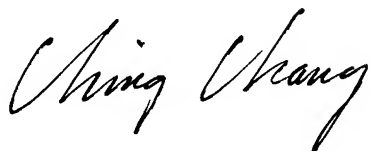
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (703)308-2623. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9302 for regular communications and (703)872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-1148.

Application/Control Number: 10/092,815
Art Unit: 3748

Page 9

Patent Examiner

A handwritten signature in cursive script, appearing to read "Ching Chang".

Ching Chang
October 22, 2003

A handwritten signature in cursive script, appearing to read "Thomas Denion".

THOMAS DENION
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700